



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,710	11/17/2003	Kiyoshi Sato	9281-4693	7081
7590	08/25/2006			EXAMINER
Brinks Hofer Gilson & Lione				CHEN, TIANJIE
P.O. Box 10395				ART UNIT
Chicago, IL 60610				PAPER NUMBER
				2627

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/716,710	SATO, KIYOSHI	
	Examiner	Art Unit	
	Tianjie Chen	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 19 July 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-6 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

Non-Final Rejection

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Election/Restrictions

2. Applicant's election without traverse of Species I, claims 1-6 in the reply filed on 07/19/2006 is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dill et al (US 6,819,527).

Dill et al shows a thin film magnetic head in Figs. 19- 21 including: a lower core layer 38 (Column 3,lines 26-27) extending from a surface facing a recording medium in a height direction; a magnetic layer 88 connected directly or indirectly to the lower core layer at a predetermined distance from the surface facing the recording medium; and a coil layer 164 toroidally wound around the magnetic layer 88 (Fig. 21); wherein a plurality of first coil pieces 164 (Fig. 20) extending in a direction crossing the

magnetic layer is disposed on the lower core layer with predetermined intervals in the height direction, the first coil (dot-line portions of 164 in Fig. 22) pieces being covered with a coil insulating layer 80 (Fig. 21, column 4, line 1) on which the magnetic layer 88 is formed; a plurality of second coil pieces 164 (Fig. 21) crossing the magnetic layer is disposed on the magnetic layer with an insulating layer provided therebetween so that ends of each second coil piece face the ends of each first coil piece in a thickness direction (Fig. 22); the insulating layer comprises a first insulating sub-layer 120 of an inorganic insulating material SiO₂ (Column 4, line 20) formed on a top of the magnetic layer, and second insulating sub-layers 130 of an organic insulating material polymer (Column 4, line 18-19) formed on both sides of the first insulating sub-layer in a track width direction within a region extending in the height direction and including a formation region of the second coil pieces; and the second insulating sub-layers extend beyond both end surfaces of the magnetic layer in the track width direction so as to be interposed between the second coil pieces and both end surfaces of the magnetic layer.

Dill et al does not specify the material for sub-insulating layer 130. However, Dill teaches that the similar insulating layer 80 and 100 can be made of either organic or inorganic (Column 4, lines 16-19). It would have been obvious that one of ordinary skill would have been expected to use same material as used for layer 80 and 100 for the second sub-insulating layer 130, which would include organic material polymer composition.

Claim 2, Dill et al further shows in Fig. 21 that the second insulating sub-layers 130 are formed on both sides of the first insulating sub-layer 120 to have a

space larger than at least a track width Tw in the track width direction (the width of gap layer 60, Fig. 18).

Claim 3, Dill et al further shows in Fig. 20 that the magnetic layer has a front end portion in which a width dimension at the surface facing the recording medium corresponds to a track width, and the width dimension is constant or gradually increases in the height direction, and a rear end portion in which a width between both base ends of the front end portion in the track width direction increases in the height direction, and the second insulating sub-layers and second coil pieces are inherently provided on a rear end portion.

Claim 4, Dill et al further shows in Fig. 19 a pole tip layer comprising at least a lower pole sub-layer 38, a gap sub-layer 44 (Column 3, line 42) made of a nonmagnetic metal material, and an upper pole sub-layer 88 which are formed by plating in turn from below, is formed on the lower core layer so that a track width Tw is defined by a width dimension of the pole tip layer in the track width direction at the surface facing the recording medium (Fig. 180), and the magnetic layer is laminated on the pole tip layer.

Claim 6, Dill et al further shows in Fig. 21 that the average thickness of the first insulating layer 120 is smaller than that of the second insulating sub-layers 130 formed on both sides of the first insulating sub-layer.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dill et al in view of Ohashi et al (US 5,828,533).

Claim 5, Dill et al does not show that the magnetic layer has a lower saturation magnetic flux density than that of the upper pole sub-layer.

Ohashi et al show a magnetic head, wherein the magnetic layer 103 is made of permalloy (Column 4, lines 36-37) has a lower saturation magnetic flux density than that of the upper pole sub-layer 102, which is made of Fe-Ta-N (Column 4, lines 11-12 and column 4, lines 45-46); and teaches thus constructed upper pole would have excellent soft magnetic characteristics (Column 2, lines 54-56). One of ordinary skill in the art would have been motivated to adopt Ohashi et al's design for obtaining excellent soft magnetic characteristics.

Conclusion

5. The prior art made of record in PTO-892 Form and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is 571-272-7570. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Chen Tianjie
TIANJIE CHEN
PRIMARY EXAMINER